

**NEED ASSESSMENT OF OUTDOOR RECREATION
FOR THE CHARLESTON HARBOR PROJECT AREA**

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Introduction

In a workshop in September 1993, the Charleston Harbor Project established the following public utilization goals for the Charleston Harbor estuarine system:

1. to document present levels of public utilization of the Charleston Harbor estuary and its resources;
2. to enhance cultural, recreational, economic and public use of the estuary;
3. to increase public awareness and involvement in management of the Charleston Harbor system.

As the population of Berkeley, Charleston and Dorchester counties continues to grow the availability of outdoor recreational opportunities must be addressed now to adequately accommodate the needs of area residents in the future. Additionally, the burden of providing an adequate level of recreational opportunities for the area is heightened by the expected increase in tourists' demands.

Many of the recreational opportunities in the trident area are based on its abundant natural resources, particularly the marine, estuarine, riverine and lacustrine resources. Public access to these water-related resources has often been taken for granted and assumed available in perpetuity. However, as the pressure of population growth has increased, public access has been adversely impacted, possibly decreasing as a result of the gradual change from rural to suburban land ownership. Accordingly, the process to rectify possible imbalances and provide adequate access to public waters requires long-range planning (Sargent, et al 1991). The following steps are suggested for such long-range planning: (1) conduct an inventory of public access; (2) develop public goals for access to public lands and waters with a survey; (3) and develop a long-range plan to achieve public access in accordance with those goals and with the financial resources of the community.

Historical and Current

The inventory of sites and facilities providing outdoor, water-based recreation in the Charleston Harbor area was completed in June 1994. To accomplish the second step cited above, a needs assessment of outdoor recreation was conducted. In carrying out the needs assessment, information was gleaned from several earlier studies on recreation development in the area. By and large, the needs assessment was viewed as an important step in the process to achieve the public utilization goals of the Charleston Harbor Project. First, it addressed goal one by documenting the present level of public utilization of water resources for recreational purposes. Second, it established an agenda for fulfilling goal two, which seeks to enhance the cultural, recreational and economic use of the estuary. Finally, in conjunction with the previous inventory, a needs assessment provided a means of increasing public awareness and involvement in the management of the Charleston Harbor system by developing a database of information on recreational usage.

To eventually realize public utilization goals mentioned earlier, the third step -- a long-range plan -- is needed to guide all parties involved in managing the Charleston Harbor Estuary. This long-range plan could rely on the information provided in both the inventory and needs assessment to point out sites for the development of specific recreational activities. It is obvious from the inventory and needs assessment that certain sections of the Charleston Harbor Project Area have an adequate supply of sites and facilities which provide amenities for water-related recreational activities. Yet, many sections of the Project Area have few, if any, amenities that provide or facilitate such activities. A long-range plan for outdoor, water-related recreation would furnish a means to address the disparity found in the provision of recreational opportunities within the Project area.

This needs assessment primarily addressed the use of water-related recreational resources in the watershed of the Charleston Harbor estuary. Other dimensions of public utilization, such as cultural and economic uses, were addressed but indirectly; a separate analysis is recommended.

Methodology

The procedure to conduct the inventory was as follows:

- 1) determine the number of public providers of recreational facilities and services;
- 2) survey these providers by requesting information on all water-based recreation facilities and services supplied;
- 3) compile a list of facilities and services from all available sources of information; and
- 3) compile a database of all water-based recreation opportunities in the Charleston Harbor Project area.

The procedure to conduct the needs assessment was as follows:

- 1) review existing sources of information which assess the future needs for public access to outdoor, water-based recreational opportunities in the Charleston Harbor Project area.
- 2) develop an appropriate survey instrument to address specific questions not answered in #1 above.
- 3) administer the survey instrument and enter the responses into a database for analysis.
- 4) to prepare a report of the findings from the secondary data search and the survey.

The Charleston Harbor Project Area

Specifically, this inventory and needs assessment of outdoor recreation examined the water-related activities and facilities within the Charleston Harbor Project area, which is located within Berkeley, Charleston and Dorchester counties. A brief description of each county is provided for a background overview of the area, particularly its setting for water-based recreational opportunities.

In 1990 the number of people residing in South Carolina totaled 3.49 million, with approximately 506,875 (14.5%) living in the Berkeley-Charleston-Dorchester (BCD) region. The region has a total land area of 2592 square miles. (See Table I.) The area of study for the Charleston Harbor Project covers just over 1900 square miles.

TABLE I.
POPULATION, LAND AREA, AND DENSITY OF THE COUNTIES
IN THE BCD REGION, 1990
(WITH STATE RANK)

County	Population	Land Area (sq. mi.)	Density (sq. mi)	Water Area (sq. mi.)
Berkeley	128,776 (9)	1099.55 (3)	117.1 (15)	129.68 (4)
Charleston	295,039 (2)	917.42 (7)	321.6 (3)	439.72 (1)
Dorchester	83,060 (16)	574.79 (27)	144.5 (11)	1.96 (43)
TOTAL	506,875	2,591.76	583.2	571.36
STATE	3,486,703	30,111.13	115.8	1896.00

Source: South Carolina Statistical Abstract.

Charleston County is the State's most urban county, having 88% (259,697) of its residents living in an area defined as urban according to the U.S. Census definition.¹ Similarly, Berkeley and Dorchester are significantly more urban than rural with 65.1% and 67.4% of their populations classified as urban, respectively. (See Table II.)

TABLE II.
URBAN AND RURAL RESIDENCE OF BCD REGION
1970, 1980, AND 1990

County	1970		1980		1990	
	Urban	Rural	Urban	Rural	Urban	Rural
Berkeley	25,745	30,454	55,633	39,094	83,896	44,880
Charleston	202,654	44,996	242,477	34,497	259,697	35,342
Dorchester	3,839	28,437	34,161	24,600	55,970	27,090
TOTAL	232,238	103,887	332,271	98,191	399,563	107,312

Source: South Carolina Statistical Abstract.

Experiencing tremendous growth since 1970, Berkeley and Dorchester have become urban counties only during the past 20 years. Since 1980, they are the second and third fastest growing counties in the State. (See Table III.)

TABLE III.
POPULATION OF BERKELEY, CHARLESTON AND DORCHESTER COUNTIES
1970 - 1990

County	1970	1980	% Change 1970-80	1990	% Change 1980-90	Sta. Rank % Change
Berkeley	56,199	94,727	68.6	128,776	35.9	3
Charleston	247,650	276,974	11.8	295,039	6.5	24
Dorchester	32,276	58,761	82.1	83,060	41.4	2
TOTAL	336,125	430,462	21.9	506,875	15.1	
STATE	2,590,713	3,121,820	20.5	3,486,703	11.7	

Source: South Carolina Statistical Abstract.

The remarkable growth in the region is expected to continue into the next century, reaching a total population of 776,500 by the year 2010. (See Table IV.)

TABLE IV.
POPULATION PROJECTIONS FOR COUNTIES IN THE BCD REGION
1970 - 1990

County	1990	1995	2000	2005	2010
Berkeley	128,776	152,500	180,000	212,600	252,800
Charleston	295,039	312,000	320,600	329,800	339,400
Dorchester	83,060	100,500	122,700	151,000	184,300
TOTAL	506,875	565,000	623,300	693,400	776,500
STATE	3,486,703	3,741,700	3,976,800	4,218,000	4,486,700

Source: South Carolina Statistical Abstract.

Characteristics and Trends

The percentage of residents 18 years of age or under is higher in Berkeley and Dorchester than the State's overall percentage. Berkeley ranks the highest in the State regarding this statistic. Correspondingly, Berkeley and Dorchester have low percentages of older residents, ranking 46th and 45th in the State, respectively, in the percentage of the population 65 years of age or older. Finally, of the three counties, Charleston has the highest percentage of minority residents with 36.4 percent. (See Table V.)

The rate of unemployment for each of the three counties is below the State's total rate of unemployment. (See Table VI.) However, the percentage of residents below the poverty level for each county is greater than 11 percent, with Charleston County the highest having 17.3 percent of its residents below the poverty level and exceeding the State's overall percentage of residents below the poverty level at 15.4 percent.² (See Table VII.)

TABLE V.
SELECTED CHARACTERISTICS FOR COUNTIES IN THE BCD REGION
APRIL 1990

County	% OF POP. UNDER 18	STATE RANK	% OF POP. 65 OR OLDER	STATE RANK	% MINORITY POPULATION	STATE RANK
Berkeley	32.4	1	5.7	46	27.1	34
Charleston	25.0	37	10.1	41	36.4	24
Dorchester	29.6	11	7.4	45	25.0	36
STATE	26.4		11.4		30.9	

Source: South Carolina Statistical Abstract.

TABLE VI.
LABOR FORCE AND UNEMPLOYMENT DATA FOR COUNTIES IN THE BCD REGION
1992 ANNUAL AVERAGE

County	LABOR FORCE	STATE RANK	UNEMPLOYED NUMBER	STATE RANK	UNEMPLOYED RATE	STATE RANK
Berkeley	57,710	11	3220	12	5.6	36
Charleston	146,240	3	8650	2	5.9	35
Dorchester	40,060	14	2060	18	5.1	40
STATE	1,772,000		111,000		6.2	

Source: South Carolina Statistical Abstract.

TABLE VII.

**POPULATION, MEDIAN FAMILY INCOME, PER CAPITA INCOME
AND PERSONS WITH INCOME BELOW THE POVERTY LEVEL, 1989**

County	Population*	Median Family Inc.	Per Capita Income	Number Below Poverty Level	Pct. Below
Berkeley	127,471	\$30,913	\$10,942	15,672	12.3
Charleston	279,595	\$31,374	\$13,068	48,508	17.3
Dorchester	81,126	\$34,209	\$11,884	9,360	11.5
STATE	3,368,125	\$30,797	\$11,897	517,793	15.4

Source: South Carolina Statistical Abstract.

* Poverty status is determined for all persons except inmates of institutions, persons in military group quarters and in college dormitories, and unrelated individuals under age 15.

Within the tri-county region, there are 22 incorporated municipalities, with six having 10,000 or more residents (Charleston, 80,414; North Charleston, 70,218; Mount Pleasant, 30,108; Goose Creek, 24,692; Summerville, 22,519; and, Hanahan, 13,176).¹ Additionally, the counties are served by their respective county councils and the BCD Council of Governments (COG).

BerkeleyBerkeleyBerkeley

Berkeley is the third largest county in South Carolina having nearly 1100 square miles of land area. It has three major urban communities located within the boundary of Charleston Harbor Project: Goose Creek, Hanahan, and Moncks Corner. Additionally, the communities of Bonneau and St. Stephen border the CHP study area. A part of North Charleston is located within the county.

Each of these communities is served by a recreation department or program, as listed by the South Carolina Department of Parks, Recreation and Tourism. The Berkeley County Planning Office and the Santee Cooper Public Service Authority are providers of a limited range of recreational opportunities. The providers of recreational facilities and services in the county are as follows:
Bonneau Recreation Department

Berkeley County Planning

Goose Creek Parks & Playground Commission

Hanahan Recreation Department

Moncks Corner Recreation Department

North Charleston Recreation and Parks Department

St. Stephen, Town of

Santee Cooper (PSA)

CharlestonCharlestonCharleston

Of the three counties, only Charleston has oceanfront beaches, with 91 miles fronting the Atlantic Ocean along the barrier islands that parallel its coastline. Some of these barrier islands are the haven for some of the most exclusive resort and residential communities in the country, including the Isle of Palms, Kiawah, Seabrook, and Dewees Islands. Others, like Sullivans's Island and Folly Beach are established, middle-class residential communities. Public access to the beach is provided on all, except Seabrook and Dewees.

The major urban communities in the county include the cities of Charleston and North Charleston and the Town of Mount Pleasant. Public service districts serve both the heavily-populated suburban areas "West of the Ashley" (including James Island and St. Andrews) and in the northern end (Ladson), and the lesser populated areas in rural Charleston County (Edisto Island). There are 12 providers of recreational facilities and services in the county, and all are located within the study area of the Charleston Harbor Project:

Charleston County Park & Recreation Commission

Charleston, City of -- Department of Recreation

Cooper River Park & Playground Commission

Folly Beach, City of

Hollywood, Town of

Isle of Palms Recreation Department

Meggett, Town of

Mount Pleasant Recreation Department

North Charleston Recreation & Parks Department

Ravenel, Town of

St. Andrew's Parish Parks and Playground

Sullivan's Island, Town of

DorchesterDorchesterDorchester

Summerville is the major urban community in Dorchester County. There are four providers of recreational facilities and services in the county. However, only Summerville is located within the study area of the Charleston Harbor Project. Part of North Charleston is located in the county, also. The providers include:

Dorchester County

Harleyville Recreation Center

St. George, Town of

Summerville, Town of

Water Resources for Recreational ActivitiesWater Resources for Recreational ActivitiesWater Resources for Recreational Activities

There are over 130 bodies of water listed for the CHP area, with more than two-thirds located in Charleston County. The major bodies of water within the study area include: Ashley River, Cooper River, East Branch Cooper River, West Branch Cooper River, Lake Moultrie, Stono River, North Edisto River, Wando River, Charleston Harbor, and the Atlantic Ocean.

Berkeley County -- 40 Listings

Wando River *

Ralstons Creek

Beresford Creek

Martin's Creek

Cooper River *

Flag Creek

Grove Creek

Freshing Lead Creek

East Branch Cooper River *

French Quarter Creek

Quinby Creek

Huger Creek

Negro Field Branch

Nicholson Creek

Fox Gully Branch

Cook's Creek

Kutz Creek

West Branch Cooper River *

Mepkin Creek
Wadboo Swamp
Stewart Creek
Wadboo Creek
Tailrace Canal
Lake Moultrie *
Lake Marion *
Diversion Canal
Cypress Gardens Canal
Back River *
Chicken Creek
Crane Pond
Long Field Pond
Prioleau Creek
Foster Creek
Goose Creek Reservoir *
Goose Creek
Cypress Swamp and all branches (Berkeley) *
Black Creek
Canton Creek
Partridge Creek
Thompson Creek

Charleston County -- 92 Listings

Atlantic Ocean *
Copahee Sound
Bullyard Sound
Hamlin Sound
Grays Bay Sound
Deweese Inlet
Long Creek
Seven Reaches Creek
AIWW (betw. Goat Is. and Isle of Palms)
Breach Inlet Estuary
Hamlin Creek
Swinton Creek
Inlet Creek
Conch Creek
AIWW (from Breach Inlet to Ben Sawyer Bridge)

Charleston Harbor *
The Cove
Shem Creek
Horse Creek
Molasses Creek
Wando River *
Hobcaw Creek
Rathall Creek
Dutchman Creek
Horlbeck Creek
Boone Hall Creek
Wagner Creek

Toomer Creek
Darrell Creek
Alston Creek
Guerin Creek
South Edisto River
Adams Run Creek
North Edisto River *
Toogoodoo Creek
Lower Toogoodoo Creek
Tom Point Creek
Dawhoo River
Whooping Island Creek
North Creek
AIWW (on Edisto Is.)
Russel Creek
Steamboat Creek
Wadmalaw River
Gibson Creek
Wadmalaw Sound
New Cut
Church Creek
Rantowles Creek (Charleston)
Wallace Creek
Log Bridge Creek
Mellchamp Creek
Middle Creek
Caw Caw Swamp
Caddin Bridge Swamp
Leadenwah Creek
Adams Creek
Fickling Creek
Bohicket Creek
Store Creek
Ocella Creek
Frampton Inlet
Captain Sams Inlet
Captain Sams Creek
Privateer Creek
Haulover Creek

Kiawah River *
Cinder Creek
Bass Creek
Chaplin Creek
Stono River *
Abbapoola Creek
Folly River *
Green Creek
Cole Creek
King Flats Creek
Robbins Creek
Long Island River
Sister Creeks
Lighthouse Creek

Secessionville Creek
Sol Legare Creek
Clark Sound
Oak Island Creek
Ashley River *
James Island Creek
Wappoo Creek/Elliott Cut
Orangegrove Creek
Bull Creek
Church Creek
Long Creek
Keivling Creek
Macbeth Creek
Cooper River *
Noisette Creek

Dorchester -- 12 Listings

Cypress Swamp and all branches (Dorchester)*
Captains Creek
Rumphs Hill Creek
Negro Branch
Ashley River and all branches (Dorchester)*
Dorchester Creek
Coosaw Creek
Eagle Creek
Rantowles Creek (Dorchester)*
Fishburne Creek
Bear Swamp/Horse Savanna
Edisto River (Dorchester)*

(The bodies of water marked by the asterisk [*] receive inflow from the bodies of water listed immediately following them. This list is not considered comprehensive; however, it contains the bodies of water readily identified on maps used by the Charleston Harbor Project and the S.C. Department of Highways & Public Transportation.)

For the most part, public access to water-related recreational opportunities is provided by municipalities and counties in the region. As shown above, there are 24 governmental or quasi-governmental entities that provide recreational services or maintain recreational facilities in the region; however, less than half are involved in outdoor, water-related recreation. Particularly, there is no county-sponsored recreation program in either Berkeley or Dorchester counties, which has hampered the development of outdoor recreation in areas outside of city-owned or state-held lands. Furthermore, the several small communities in the rural areas of these counties cannot afford such development.

Needs Assessment: Previous Studies
Needs Assessment: Previous Studies

Another important task in developing the long-range plan is

assessing the need for enhancing public utilization of all water resources in the CHP area. To conduct this needs assessment, several earlier studies were analyzed. A summary of each follows.

Berkeley, Charleston, Dorchester RORP
Berkeley, Charleston, Dorchester RORP

The Berkeley-Charleston-Dorchester Council of Governments issued in March 1980 its "Regional Outdoor Recreation Plan" (RORP) as a part of the State Comprehensive Outdoor Recreation Plan (SCORP). Primarily, the report addressed the need for certain types of facilities to serve various localities across the BCD region. The types of facilities needed by any locale was determined by a hierarchy of facilities which was based on various sizes of development, including local mini-parks, neighborhood parks, playing fields, recreation complexes, city-wide parks, district parks. The need for any one of these types of facilities was established by standards derived from various factors in a community: population served, location, land requirement, service area, and amenities available. (Single-purpose facilities, such as boat landings, were not addressed by the standards, and were not included in the hierarchy.)

Though the report was extremely informative by providing an overview of existing facilities and future requirements for facilities in the BCD region, there was little discussion or information on specific needs for outdoor, water-based recreation, such as waterfront parks, creek and river trails, and fishing and boating areas. In its brief review of water-based recreation in the region, the following points were made which are relevant today:

- 1) Water is the region's greatest natural asset, as well as its greatest potential for recreation development. Charleston's coastal beaches and the Santee-Cooper Lakes form a regional complex of extensive recreation opportunities. Existing facilities [in 1980] barely tapped the potential.
- 2) The demands are heavy. There is still a great deal of coastline left restricted and inaccessible to public use. The Charleston beaches are burdened not only with county residents, but with visitors from inland South Carolina and other states. The demand is far greater than the supply of facilities available.
- 3) At present, Charleston County seems deadlocked in terms of shorefront acquisition, but when one considers the pressures, it is important that steps be taken to acquire it when possible.
- 4) Berkeley County's lakefront is obviously taken to private uses. Having nearly 52.5 miles of waterfront along Lake Moultrie and 25 miles along Lake Marion, it is significant that there are no supervised public swimming areas. Private

cottages, commercial fish camps, and private recreation areas have taken over the lakeside. There are several commercial beaches near Moncks Corner -- Lion's Beach and White Point Beach, a commercial establishment with cottages.

5) The region abounds with navigable waterways. The Santee-Cooper Lakes and the Ashley, Cooper, Edisto, Stono and Wando Rivers make boating possible from the river mouths far back into tributary creeks, tidal marshes and forested swamps. They afford passage through a spectrum of ecological settings.

6) There are numerous boat landings in the region, primarily in Charleston and Berkeley Counties. For the most part they are evenly distributed along the principal rivers and creeks. Amenities, such as picnicking facilities with shade trees, are not available at most. Parking should be increased at the landing sites, where possible.

7) There is a need for establishments that rent boating equipment and/or provide boating services at a reasonable cost to the general public. The rental of equipment and the provision of services for other water-related activities is highly feasible, such as jet skiing, windsurfing, surf fishing, and scuba diving.

8) There is a need for more publicly accessible docks and fishing piers.

Since the BCD RORP did not utilize its standards for development to assess the need for water-based recreational facilities, that determination can be made by other means which specifically address particular uses by various groups. In developing the RORP, the demand for certain uses is considered an important element in site development. Furthermore, uses vary according to the user groups, which include local residents, county residents from nearby communities, visitors from neighboring counties, in-state and out-of-state day trippers, extended stay visitors, and long-distance travelers. Perhaps, foremost among all considerations in site development is the preference of uses of local residents. After all, they are arguably the group affected most by the development.

A survey questionnaire was administered to residents of the three counties to determine local preferences. Unfortunately, the response rate was very low among all subgroups of the local residents, except high school students. Oversampling of this group did provide useful information regarding recreation preferences, though the data was obviously skewed by the similarity in interests of most high school students. There were 1231 respondents to the survey, which included over 1000 high school students. Of 21 activities listed to determine the respondents present participation (use) and their desire for participation, six involved outdoor, water-based activities: boating (sail or power), ocean swimming, lake or river swimming, fishing, boat ramps, and marinas; seven more

involved activities which might be located near a body of water, including biking trails, hiking trails, jogging trails, camping, golf, picnicking and passive areas. The results are shown in Table VIII. (Pool swimming is not included.)

TABLE VIII.TABLE VIII.TABLE VIII.

**RESPONDENTS CITING PARTICIPATION, AND DESIRE FOR PARTICIPATION
IN VARIOUS RECREATION ACTIVITIES, FROM 1980 RORP**

Activity*	Berkeley		Charleston		Dorchester	
	Use	Would Use	Use	Would Use	Use	Would Use
Biking trail	93	185	229	155	54	34
Hiking trail	50	153	78	144	22	31
Jogging trail	76	147	161	113	34	27
Boating	129	83	235	83	44	11
Camping	140	105	227	119	61	28
Golf	33	64	94	70	23	15
Swim, Ocean	152	34	334	19	60	5
Swim, Lake or River	196	37	242	25	80	6
Picnicking	191	53	327	42	69	15
Fishing	250	42	360	39	87	8
Boat Ramp	64	44	111	39	26	11
Marina	22	49	96	57	13	10
Passive Area	83	48	148	33	23	20

Source: Regional Outdoor Recreation Plan 1980.

* The complete list contained 21 different activities.
State Comprehensive Outdoor Recreation Plan (SCORP) 1990
State Comprehensive Outdoor Recreation Plan (SCORP) 1990
State Comprehensive Outdoor Recreation Plan (SCORP) 1990

Perhaps, a more accurate indication of outdoor recreation preferences is provided by the "South Carolina State Comprehensive Outdoor Recreation Plan of 1990." The purpose of the plan is to: consider outdoor recreation issues relating to the citizens and

visitors of South Carolina, examine the State's recreational resources, analyze demand for recreational opportunities, develop an implementation program to address the identified needs and issues, and identify issues of national importance. As a part of this plan, a study was conducted to determine the amount of participation in and the preferences for various recreational activities among South Carolina residents. There were 2,045 respondents age 12 and older included in the survey, which was administered primarily by telephone to randomly selected individuals within the State.

The percentages of South Carolina residents who participated in a list of traditional outdoor and other types of recreational activities at least once during the previous 12 months was compiled through the survey. There were 43 activities included in the list with 22 involving water use or possibly having a proximity to water. (A list of these water-related activities is shown in Table IX. Swimming in a man-made pool is not included.)

As shown, walking for pleasure or exercise is the activity having the largest percentage of participants with 80.5 percent. In fact, over the years that this survey has been administered, (1979, 1984, and 1990) this activity -- walking for pleasure -- has increased its percentage of participants steadily. Other activities related to water use or possibly occurring near a body of water have shown increases as well, including driving for pleasure and beach swimming. However, others have shown a decrease in the percentage of respondents participating, such as lake/river fishing; and, some have fluctuated up and down between the surveys, like picnicking. (See Table X.)

Another important consideration in characterizing participation in South Carolina is the frequency with which individuals participate in the various types of activities. The need for particular recreational facilities within the State is dependent on both the percentage of the population that participates in an activity and the average number of times that one person participates in a given activity. When the number of times a person participates in an activity is considered, the overall level of participation is remarkably different from the percentages shown in Table IX.

TABLE IX.TABLE IX.TABLE IX.

STATEWIDE RECREATION PARTICIPATION 1990 AGE 12 AND OLDER

Percentage

Activity*	Participating
Walking for pleasure or exercise	80.5
Driving for pleasure	63.9
Picnicking	60.5
Beach swimming	59.3
Visiting historical sites	46.8
Bicycling	43.3
Lake/river fishing	38.6
Jogging/running	31.5
Motorboating	29.8
Lake swimming	29.2
Camping	21.2
Guided nature trail	20.1
Birdwatching	18.0
Saltwater fishing	17.2
Hunting	16.9
Golf	15.9
Waterskiing	14.5
Hiking	13.5
Canoeing, kayaking, rafting	6.9
Sailing	5.3
Jetskiing	3.9
Sailboarding/windsurfing	1.7

Source: South Carolina State Comprehensive Outdoor Recreation Plan 1990.

* The complete list contained 43 different activities.

According to the SCORP 1990, several demographic characteristics affect recreational participation, with age having the largest systematic impact. In general, younger people participate in recreational activities, with participation consistently declining across older subgroups. Furthermore, younger people are generally more likely to participate in a variety of activities that are more strenuous physically. As the State's population continues to age, with the median age projected to increase from 28.1 in 1980 to 36 by the year 2000, recreation planners must fully consider the implications.

TABLE X.TABLE X.TABLE X.

STATEWIDE RECREATION PARTICIPATION IN 1979, 1984, AND 1990
AGE 18 AND OLDER TOP TEN ACTIVITIES COMPARED

Year	Percentage Participating
------	--------------------------

1979

1.	Walking for pleasure	67.9
2.	Picnicking	65.2
3.	Attending outdoor sporting events	62.8
4.	Driving for pleasure	58.5
5.	Lake/river fishing	54.2
6.	Visiting historical sites, museums, zoos	52.8
7.	Beach swimming	47.5
8.	Pool swimming	40.3
9.	Playing ball	39.3
10.	Lake swimming	39.3

1984

1.	Walking for pleasure	70.9
2.	Driving for pleasure	64.7
3.	Beach swimming	58.4
4.	Picnicking	57.1
5.	Attending outdoor sporting events	53.1
6.	Lake/river fishing	46.9
7.	Pool swimming	45.0
8.	Jogging/running	40.6
9.	Visiting historical sites	40.6
10.	Bicycling	38.3

1990

1.	Walking for pleasure	79.7
2.	Driving for pleasure	65.5
3.	Picnicking	61.1
4.	Attending outdoor sporting events	60.5
5.	Beach swimming	57.1
6.	Visiting historical sites	53.9
7.	Pool swimming	53.7
8.	Bicycling	37.8
9.	Lake/river fishing	37.5
10.	Visiting a zoo	36.1

Source: South Carolina State Comprehensive Outdoor Recreation Plan 1990.

Furthermore, there are significant differences in recreation participation between men and women. Men have higher rates of participation for activities like hunting, fishing, camping, motorboating and waterskiing. Women are more likely than men to participate in activities such as walking for pleasure, picnicking and visiting historical sites.

Significant differences in outdoor recreation participation are found between blacks and whites. A higher percentage of whites than

blacks participate in most water-related activities, including beach swimming, motorboating, waterskiing, and saltwater fishing. Additionally, a higher percentage of whites than blacks participate in other outdoor activities, such as camping and hiking.

Lastly, family income affects outdoor recreation participation. A greater percentage of individuals from the higher family income levels have significantly more opportunities to participate in a variety of activities which utilize water resources, particularly golfing, camping, and beach swimming, than individuals from the lower family income levels. However, there were no differences across income levels for several activities utilizing water resources, including walking for pleasure, jogging, fishing and hunting.

The respondents' preferences for outdoor recreational activities has been compiled, also. Most of the activities listed either involve water resources or possibly occur near some water resource. (See Table XI.)

The SCORP 1990 included a brief discussion on non-resident outdoor recreation participation using information from 1987-88 Out-of-State Visitors Survey and the 1985-87 Public Area Recreation Visitors Survey (PARVS) compiled by SCPRT. In summary, visitors are more likely to participate in walking, beach and lake swimming, camping, visiting historic sites, and seeing the State's other sites. Thus, the demand for outdoor recreation opportunities by visitors is largely for those features which make South Carolina unique and an attractive place to vacation -- its beaches, lakes, rivers, historical attraction and scenic areas.

TABLE XI.TABLE XI.TABLE XI.

PREFERRED OUTDOOR ACTIVITIES 1979, 1984 AND 1990²

Recreational Activity	1990	1984 ¹ 1979
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1.	Playing ball	22.6	14.3	11.4
	(softball, football, basketball, volleyball, baseball)			
2.	Walking for pleasure	11.2	4.4	4.4
3.	Fishing	10.3	13.7	14.3
4.	Swimming	7.6	18.3	14.3
5.	Golf	6.4	5.2	3.5
6.	Tennis	5.2	5.4	9.2
7.	Gardening	4.5	3.8	5.8
8.	Hunting	4.2	2.0	3.3
9.	Motorboating	4.1	3.5	2.9
10.	Camping	3.8	7.8	8.7
11.	Bicycling	2.1	0.9	1.3
12.	Hiking	1.5	*	*
13.	Jogging	1.5	*	*
14.	Picnicking	1.3	3.3	4.4
15.	Horseback riding	1.2	1.3	0.8
16.	Waterskiing	1.1	2.3	2.1
17.	Others	11.4	5.0	*

Source: South Carolina State Comprehensive Outdoor Recreation Plan 1990.

* Comparable information not available.

¹ The data presented for this question in the 1984 report do not sum to 100%. One possible reason for this is that those who responded "don't know" or said they had no preference were included in the calculations, but not reported in the results.

Finally, outdoor recreation issues in South Carolina were identified through various methods and prioritized as follows:

- 1) Increased protection of natural resources (beaches, rivers, wetlands, etc.)
 - 2) Continue to provide a variety of neighborhood, community, state, and national recreation areas.
 - 3) Improvements to existing recreational facilities.
 - 4) More public recreational access to beaches, rivers, and lakes.
 - 5) More recreational trails for hiking, biking, canoeing, or nature study.
 - 6) A state system of scenic highways with limited development and natural views.
 - 7) More parks and open space in urban areas, such as along
-

river corridors.

Additional issues were identified but not prioritized as follows:

- More funding/grants for planning, acquisition, and development.
- More funding for operation, maintenance and rehabilitation.
- Acquisition/preservation of critical wildlife and fisheries habitat of sufficient size to provide for adequate management into the future.
- Acquisition, preservation, and protection of endangered and significant cultural and historic resources.
- Public environmental and cultural education, including resource management and interpretation.
- Overall clean environment: air water, groundwater, etc.
- Conflicting trail uses of off-road vehicles (trucks, 3- or 4-wheelers, motorcycles, etc.) bicycles, horseback riders, and hikers.
- Set aside open areas and greenspaces for the future.
- Cost free recreation areas.
- Barrier-free facilities and programs for the handicapped.
- More recreation programs for teenagers/summer youth programs.
- Rural recreation planning.
- Regional recreation planning and coordination.
- The activities most expected to increase in participation or demand before the end of the century (according to recreation providers and others represented in the study) include: walking, bicycling, guided nature walks, golf, fishing, canoeing/kayaking/rafting, and guided adventure trips.

Long-Range Planning Study for Charleston County PRC
Long-Range Planning Study for Charleston County PRC
Long-Range Planning Study for Charleston County PRC

A needs assessment study for the Parks and Recreation Commission (PRC) of Charleston County was conducted in 1991 using a

survey questionnaire administered to adult residents living in the county. The questionnaire was specifically designed for this needs assessment and incorporated questions focusing on residents' socio-economic characteristics, participation in selected recreational activities, use of area park facilities, opinions about the mission of the PRC, level of support for 19 development options, and willingness to travel to participate in various activities. Further, questions were asked to determine the best method(s) to reach residents with promotional material and to determine their degree of agreement with 12 policy-related statements. A random sample of 2,550 residents received the questionnaire via first class mail; there were only 571 completed and returned.

The results of the survey led the researchers to conclude that county residents "decidedly associate the PRC with the mission of protecting the county's natural resource base and providing passive outdoor recreational activities." Further, with about three-fifths of the residents supporting the preservation mission over recreation, the researchers concluded that "the PRC must retain its mission to be oriented toward its natural resource base and provide recreational amenities in a form and fashion consistent with those resources."

In the study, residents' preferences for park and recreation developments were ranked by their level of support with beach access, trails, picnic areas and nature centers emerging as the highest priorities. (See Table XII.) Similarly, respondents showed a reasonably strong willingness to travel further distances to participate in activities associated with their use. (See Table XIII.) Overall, there was generally strong support for amenities that were water-based, including beach access, fishing, piers and water parks. Developments least supported by the respondents were RV camping, meeting/convention facilities and golf.

Respondents indicated their attendance at county parks was moderate, with at least one visit by a family member to Folly Beach, James Island or Palmetto Islands parks during the previous year. Beachwalker Park, however, had more than 70 percent report no visitation. Unsurprisingly, community parks were reported as receiving very frequent use. Relatively few respondents reported visiting the Francis Marion National Forest during the year, though over one-third did report a visit by a member of the household. (See Table XIV.) On the basis of households, the two most popular recreational activities were walking for pleasure and attending festivals and special events. (See Table XV.)

TABLE XII.TABLE XII.TABLE XII.

**ATTITUDES OF CHARLESTON COUNTY RESIDENTS
TOWARD VARIOUS OPTIONS FOR RECREATION DEVELOPMENT**

Option	Percentage				
	Strongly Agree	Agree	Neutral/ No Opinion	Disagree	Strongly Disagree
Ocean Pier	39.4	30.4	24.2	3.6	4.9
Golf Course	18.2	19.4	38.2	11.7	12.5
Hike/Bike Trail	40.1	42.5	14.1	1.3	2.0
Picnic Shelter	37.9	42.7	17.0	1.8	0.6
Beach Access	55.1	30.3	11.3	2.4	0.9
Nature Center	34.9	47.0	16.5	1.3	0.4
Rental Cottages	27.6	33.4	29.6	5.8	3.6
Water Park	38.1	32.6	22.4	4.6	2.4
Scenic Vistas	33.1	39.6	21.9	4.1	1.3
Botanical Garden	26.4	41.4	26.2	4.2	1.8
Boat Launches	39.0	26.0	28.4	5.1	1.5
Tent Camping	22.3	33.3	38.5	4.6	1.3
Outdoor Programs	33.2	46.2	19.2	0.9	0.5
Marinas	17.7	26.0	39.5	9.8	7.0
Meeting Facility	15.4	21.4	44.7	11.4	7.1
RV Camping	11.1	24.8	47.0	8.9	8.3
Equestrian Park	14.0	24.3	47.4	7.5	6.7
Picnic Areas	37.5	45.2	15.0	1.6	0.7
Amphitheater	23.4	33.9	34.1	5.5	3.0

Source: Charleston County P.R.C.

TABLE XIII.TABLE XIII.TABLE XIII.

**ATTITUDES OF CHARLESTON COUNTY RESIDENTS
TOWARD WILLINGNESS TO TRAVEL FOR VARIOUS RECREATIONAL ACTIVITIES**

Activity or Amenity	Percentage				
	1 Mile or less	2 - 5 Miles	6 - 10 Miles	11 - 20 Miles	Over 20 Miles
Fishing	12.0	15.6	32.7	28.7	11.0
Golfing	34.5	13.9	23.4	18.2	10.0
Hiking/Biking	11.4	30.8	31.6	18.5	7.7
Picnic Shelter	7.4	22.3	36.1	24.3	9.9
Beach Visit	4.9	12.8	27.5	34.2	20.4
Nature Center	4.2	15.5	32.3	28.6	19.4
Rental Cottages	8.8 7.9	18.9	23.9	40.6	
Water Park	9.3	12.7	28.3	30.4	19.2
Scenic Vistas	8.6	16.1	23.0	25.7	26.6
Botanical Garden	7.3 15.4	27.0	26.1	24.3	
Boat Launches	15.2	14.6	27.3	25.4	17.5
Tent Camping	13.4	10.3	22.3	23.4	30.6
Outdoor Programs	7.4 18.1	37.0	21.3	16.1	
Marinas	20.0	17.0	29.3	20.2	13.5
Meeting Facility	20.8	18.6	32.0	18.9	9.7
RV Camping	23.9	9.0	23.9	18.7	24.6
Equestrian Park	22.7 13.0	28.3	23.9	12.1	
Picnic Areas	6.8	19.3	34.4	24.1	15.3
Amphitheater	12.4	13.5	30.9	27.6	15.7

Source: Charleston County P.R.C.

In identifying constraints to participating in recreational opportunities offered by the PRC, respondents primarily cited two reasons: unawareness of a facility's location and the inconvenience of a facility's location. The awareness factor varied greatly among sites with Folly Beach Park having the highest level of recognition and Beachwalker Park having the lowest. (See Table XVI.)

TABLE XIV.TABLE XIV.TABLE XIV.

ATTENDANCE BY A HOUSEHOLD MEMBER
TO PARKS IN CHARLESTON COUNTY AREA

Park	Percentage				
	Never	Once	2-5 visits	5-10 visits	More than 10 visits
Folly Beach	45.4	20.0	24.5	5.3	4.9
James Island	49.2	22.1	21.0	3.8	4.0
Palmetto Isl.	42.1	23.1	24.7	4.2	6.0
Beachwalker	73.4	13.3	7.8	3.1	2.4
Nat. Forest	61.5	16.9	14.2	3.4	4.0
Charlestowne Landing	31.5	27.7	25.0	9.2	6.7
Community	19.9	9.1	39.6	12.4	19.0
Water Park or Pool	32.5	14.4	31.0	10.5	11.6

Source: Charleston County P.R.C.

TABLE XV.TABLE XV.TABLE XV.

RECREATION PARTICIPATION IN CHARLESTON COUNTY

Activity	Percentage				
	Never	Once	2-5 times	5-10 times	More than 10 times
Walked/Hiked	17.8	6.5	27.1	14.6	34.0
Fished/Crabbed	35.6	9.5	23.1	10.6	21.1
Festival/Event	18.5	17.9	44.0	10.5	9.1
Birdwatching	23.7	9.9	24.3	11.0	31.2
Canoeing	56.3	16.5	20.5	3.8	2.9

Source: Charleston County P.R.C.

TABLE XVI.TABLE XVI.TABLE XVI.

CONSTRAINTS TO VISITATION OF PARKS IN CHARLESTON COUNTY

Park	Percentage					
	Did Not	Not	Unaware	No	No Trans-	Other

Know Location	Convenient of Activity	Interest	portation			
Folly Beach	14.9	29.9	21.5	22.6	3.1	8.0
James Island	31.5	25.7	23.6	8.6	3.1	7.5
Palmetto Isl.	25.7	36.1	15.3	11.2	4.0	7.6
Beachwalker	53.2	19.6	10.9	10.3	2.1	3.9

Source: Charleston County P.R.C.

From the analysis of this survey, over twenty recommendations were offered by the research firm to the Charleston County PRC. The following recommendations possibly have implications for outdoor water-related recreational opportunities in the BCD region:

- 1) Retain the mission of protecting the county's natural resources.
- 2) Develop a separate promotional strategy to communicate to residents how the resource base is being managed.
- 3) Capitalize on the theme of eco-tourism.
- 4) Develop a nature center.
- 5) Provide convenient and secure boat launching sites for the county's numerous boaters who trailer their vessels.
- 6) Further examine the feasibility of developing a golf complex [for public use].
- 7) Pursue development of a fishing pier.
- 8) Expand and/or upgrade picnic facilities.
- 9) Include an expanded trail system in all development strategies.
- 10) Special events should be expanded for both residents and visitors.
- 11) The P.R.C. staff should expand into the program area of natural and cultural resource interpretation.
- 12) More efforts should be directed toward providing recreation programs and amenities in parks, particularly for older adults.
- 13) Expand promotional efforts to better reach and inform younger adults about the P.R.C., its facilities and

programs.

- 14) Assess the role of tourist participation in P.R.C. activities, and study this group.

SummarySummarySummary

Taken together, these three studies are very helpful in establishing a starting point for assessing the need for water-related recreational opportunities in the BCD region. Though the focus of each study involved more than the singular issue of outdoor water-related recreation, it is clear that the region's economic and social sustainability revolves around its water resources. Water is the region's dominant feature; unquestionably, it is its most important resource for a multitude of reasons.

Further, these studies indicate that in the next few years the region will experience tremendous growth. This growth will increase the demand among competitive interests to use the region's water resources. As always, one of its primary uses will be recreational activities. Current planning efforts must balance the dynamics of economic and social growth with the static requirements of the natural environment. Otherwise, many uses will become less productive or less enjoyable as the resource is degraded beyond immediate repair. Therefore, recreation development must be a part of the solution for successful resource management, not a part of the problem.

Planning Needs for Population Growth

As the population of Berkeley, Charleston and Dorchester counties continues to grow -- increasing from 506,875 in 1990 to an estimated 739,100 by the year 2015 (an increase of 46%) -- the accessibility of outdoor, water-related recreational opportunities will diminish for area residents and tourists, particularly if no steps are taken to address future inadequacies. Public access to the water resources of the region is taken for granted and assumed available in perpetuity. However, as the pressure of population growth increases, public access will be adversely impacted, possibly decreasing as a result of the gradual change from rural to suburban land ownership.

Population growth exacerbates pollution and access for competing uses. Moreover, as rapid growth occurs, the demand among competitive interests to use the region's water resources increases, but the supply cannot keep pace. As always, a primary use is recreation, however recreational usage does not usually receive high consideration from planners and other governmental officials, unless it is couched in terms related to economic development. Thus, the supply for recreational use of the water resources languishes leading to crowding at existing sites and conflict among user groups.

As the pressure of population growth increases, public access will be adversely impacted, possibly decreasing as a result of the gradual change from rural to suburban land ownership. Further, the tremendous growth in the region will increase the demand among competitive interests to use the region's water resources. Conflict between competing user groups will rise, having potentially disastrous outcomes for the people involved and the resource. Lastly, failure to strike a balance between economic development and environmental protection could have devastating consequences on the economic and social stability of the region. Overdevelopment and overuse will render the resource less productive and less enjoyable for all parties.

Need for a Long-Range Plan

The improvement in the quality of outdoor recreational opportunities in the area hinges on the involvement of residents and the providers. Obviously, the providers should lead this effort. Clearly, recreation development in the area must address three critical issues: demand is increasing while resources (sites and funding) are limited; as the types of uses grow, increased conflict between user groups can be expected; and, degradation of the resource from pollution and loss of critical habitat through inappropriate development practices will diminish recreational opportunities for many user groups.

Overall, the urgency of the threats to outdoor, water-related recreation is clearly in the mid-range -- seemingly low and agreeably not high. First, the problems that pollution poses for recreational uses of the water resources are no more severe than the problems pollution creates for other uses. However, recreational use that exacerbates pollution should be controlled and minimized. Second, competition among types of uses for the water resources is intense but not at an impasse, yet. Planners should keep in mind that recreation can be a key component of both economic development and environmental protection, serving as a bargaining chip from either perspective. Third, there is currently enough room in the water for various recreational uses, but population growth, tourism expansion, and economic and residential development may soon -- 10 to 20 years -- create access problems for certain activities in particular areas. Recreational opportunities may be diminished for some user groups. Beyond these problems, there is a need to increase public awareness and involvement in maintaining the vitality of the Charleston Harbor system. An enlightened public could become the best steward of the land and water resources.

Ideally, the provision of outdoor, water-related recreational opportunities should be coordinated through a plan developed by the various providers in the region. This requires the input and assistance of appropriate officials from all local governments in the Charleston Harbor Area. Ultimately, the responsibility of developing such a regional recreation plan falls upon those local

governments, coupled with assistance from the State.

Research and Monitoring Needs

The level of satisfaction with the region's water-related recreational opportunities may become tenuous in the next few years, particularly as the region's population steadily rises which eventually will lead to overstressed recreational resources and facilities. Discontent among user groups is sure to follow as they seek wider support for their interests from government and the public. It is important, therefore, to address the potential conflicts in advance. Recreation proponents must gather information on the evolving socio-political environment to successfully address the numerous potential problems that could arise in the next ten to twenty years.

Further, since the BCD region must expect growth, and with that, an increased demand for various outdoor, water-related recreational facilities and services, current planning efforts must ensure the stability and vitality of the natural resource base. Otherwise, the resource will become less functional and less enjoyable as the resource is degraded beyond immediate repair.

Indeed, the need for more information on the users and the capacity of the resource is the greatest task facing researchers involved in recreation management. It is a tall order, but unavoidable if preservation and conservation efforts are given any hope for success. All user groups must become partners in maintaining the integrity and productiveness of the region's coastal waters ecosystem.

Therefore, as growth continues in the region, public access, crowding, resource degradation, and facility maintenance must be monitored. The first priority should be maintenance of existing sites and facilities. Upgrades and repairs should occur at heavily-used sites immediately to prevent injuries and conflict between user groups over access. Next, crowding should be monitored through user surveys and field observation. Redirecting recreational uses to underused sites and facilities may be needed, and identifying areas for new sites and facilities is required. Further, recreation proponents must monitor the attitudes of users, public officials and society in general to competently argue the need for outdoor recreation development. In the debate for sufficient funding, an increase in the recreation budget is often viewed as the request most difficult to justify, in light of all the other programs clamoring for more money. Each of these three activities should be ongoing presently within agencies responsible for recreation development and programming. The cost to carry out such activities can be relatively inexpensive, depending on the resources available to the agency.

Degradation of the water resource should be monitored by other appropriate agencies, and parties responsible for recreational services and facilities should keep abreast of any information generated from them. The information on pollution and loss of critical habitats should fuel the argument for sound recreation planning, not deter it.

Recreational Resources - Status and Threats

Historically and presently, the region's economic and social sustainability revolves around its water resources. Water is the region's dominant natural feature, and unquestionably, it is its most important resource.

Inventory

A thorough inventory of outdoor recreation amenities and activities involving water resources in the region is the first step in identifying the strengths and weaknesses of public access and utilization programs. In the spring of 1994, a list of providers of outdoor recreation in the BCD region was compiled with the assistance of the South Carolina Department of Parks, Recreation and Tourism (PRT) and the South Carolina Recreation and Park Association. A total of 23 providers were identified. (See pages 7-9.)

A letter was sent to each provider listed asking them to supply information regarding the provision of outdoor, water-related recreational facilities and services in their communities. (See Appendix, Item 1-A and Item 1-B.) A second letter was sent two weeks later. Only 10 of the 23 responded. (Though contacted, St. George and Harleyville in Dorchester County are outside the boundary that delineates the area of study for the Charleston Harbor Project.) In addition, the South Carolina Wildlife and Marine Resources provided information on the public boat landings in the tri-county region.

Further steps in the process for developing this inventory included: 1) locating and reviewing existing documents with information on sites and facilities for boating and other outdoor water-related recreation in the area; 2) developing a list of these sites and facilities in the area; and 3) contacting by telephone all sites and facilities identified above to verify findings. By mid-summer a preliminary inventory was compiled from all identified sources. The inventory had 194 listings on September 30, 1994

The inventory includes data on several variables which describes each amenity or activity listed. This background information is highly valuable in determining the need for new development in an area or specific improvements to existing facilities. Furthermore, this information will facilitate the production of a promotional brochure which has been proposed. The inventory data is stored in a dBase IV file. (The structure of the

database with variables is shown in Appendix, Item 2-A.) As new information is received, the file is revised and updated. In addition, sites and facilities that have a specific address or location have been designated on a map of the Charleston Harbor Project area, approximately 3' x 3.5' in size. (Special events, tours, cruises and other similar activities were not included on the map.)

An inventory of the water resources of the region identified over 130 bodies of water in the CHP area, with more than two-thirds located in Charleston County. The major bodies of water within the study area include: Ashley River, Cooper River, East Branch Cooper River, West Branch Cooper River, Lake Moultrie, Stono River, North Edisto River, Wando River, Charleston Harbor, and the Atlantic Ocean. Altogether, Charleston County has 92 bodies of water in the listing; Berkeley County has 40, and Dorchester has 12. In addition, there are numerous unnamed creeks across the region which have not been included in the total.

Further, an inventory of outdoor recreation amenities and activities involving water resources in the region included 194 listings. The inventory contained among other things: 50 boat ramps, 33 city parks, 23 golf courses, 18 marinas, 14 fishing camps, 12 special events, six state parks, five county parks, five campgrounds, four house and gardens, four walking tours, three gardens, two forest preserves, two state agencies, two boat tours, and one magnificent old oak tree. Further analysis indicates that 125 of the listings are located in Charleston County, 53 in Berkeley, and 15 in Dorchester. One listing, the Francis Marion National Forest, is located in both Berkeley and Charleston counties. Most of the listings are found along several major bodies of water. There are 18 listings on the Ashley River, 16 on Lake Moultrie, 14 on the Atlantic Ocean, eight on the Cooper River, seven around Charleston Harbor, seven on Lake Marion, seven on the Stono River, five on the Edisto River, four each on the Folly and Wando Rivers, and three each on Bohicket Creek, Boone Hall Creek, Santee River, and Tailrace Canal.

There were 24 governmental or quasi-governmental entities that provide recreational services or maintain recreational facilities in the region; however, less than half are involved in outdoor, water-related recreation. There are 117 listings in the inventory operated by a public entity, and 73 listings are commercially operated. Three could not be determined. Regarding fees, 84 listings are fee-operated; 57 do not charge a fee, and 53 are not

determinable. Furthermore, 49 listings provide rental equipment. Though 26 listings provide overnight accommodations, 103 do not, and the status of 65 are unknown.

Survey of BCD Residents

The final aspect of this needs assessment was a survey of residents in the BCD region to gather insight regarding their utilization of water resources for recreational purposes. This brief survey was intended to provide preliminary information in determining the parameters for a much larger, in-depth survey. The survey was administered by telephone to a systematically-drawn sample of subscribers listed in the Greater Charleston telephone directory which includes the three county area. All calls were made during the week of September 26 - 30, 1994. There were 328 calls made, with 128 (39%) responding to the questionnaire. All interviewees were unidentifiable with their responses. (See Appendix, Item 3-A.)

Demographically, there were 30 respondents from Berkeley County, 95 from Charleston County, and only three from Dorchester County. Male respondents totaled 59 with females totaling 69. The average age of the respondent was 41 year old, with the mode 34 year old and the median 37 years old. Further, there was an average of 3.1 persons per household, with a mode of 2 persons per household and a median of 3 persons per household.

In responding to the first question (#1), on the average most respondents had participated in a recreational activity involving a local body of water within the past 257 days. (All time estimations by respondents were converted to days for consistency in calculations.) There were 93 respondents (72.7%) who participated in a recreational activity involving a local body of water within the past three months, and 77 (60.1%) who participated in such an activity in the past 30 days.

In the second question (#2), the body of water most often used was the Atlantic Ocean, with 41 respondents (32%) indicating just that. Charleston Harbor was cited by 15 respondents (11.7%), the Cooper River by 11 (8.6%), the Ashley River by 8 (6.3%), Lake Moultrie by 7 (5.5%). No other body of water was cited by more than three respondents. In all 30 different bodies of water were named. Surprisingly, a number of respondents could not identify the body of water by its correct name, rather they used the name of the facility which was located on the body of water.

This inability to identify the body of water carried over to the next question (#3). There were 20 respondents who could not identify the county for the body of water they used. However, 84 (65.6%) stated they were using a body of water in Charleston County, and 24 (18.8%) identified Berkeley County.

For question #4, the respondents were asked to identify the recreational activity which led to using the body of water. The activity cited most often was swimming with 24 (18.8%) providing this response. Fishing followed closely behind having 22 responses

(17.2%). Boating was cited by 16 respondents (12.5%). Ten others (7.8%) cited some form of seafood harvesting, including shellfishing, crabbing, shrimping, surf fishing or gigging for flounder. Enjoying the beach was sufficient activity for seven respondents (5.5%). Sailing (4.7%) and walking (4.7%) were mentioned by six each. Three each cited cruises, picnicking, and skiing. All together, there were 25 different activities cited.

Question #5 asked the respondents to identify their level of participation in outdoor recreation involving water-related activities. There were 44 respondents (34.4%) who stated they frequently participated in such activity; 51 (39.8%) stated they occasionally participated; 25 (19.5%) claimed they rarely participated in this type of activity; and, eight (6.3%) stated they never participated in outdoor water-related activities.

With question #6, the respondents were asked to identify their involvement with specific water-related activities. Sightseeing or nature observation was identified by more respondents, 95 (74.2%) than any other activity, and walking or jogging on the beach was a not-to-distant second with 86 (67.2%). The activities with the number of respondents identifying each are listed in Table XVII. In many aspects, this list is quite similar to the list of activities identified through the statewide survey of outdoor recreation participation shown in Table IX. Perhaps, the dissimilarities are attributable to the focus on water-related activities in this survey and the general influence that the water resources in the BCD region has on the area's outdoor recreational opportunities.

Question #7 asked the respondents if they had ever participated in a recreational activity involving a wetland, swamp or marsh in the tri-county region. Exactly one-fourth of the respondents (32) stated they had utilized a wetland resource in a recreational activity. Nearly half (15) had walked or hiked through a wetland area for exercise, nature observation, educational purpose or environmental cleanup. Six hunted in these areas, and five fished or shellfished there. Finally, boating and canoeing were identified by at least two respondents each.

Question #8 asked the respondents to identify any problems they experienced trying to utilize the coastal waters or wetlands for recreational activities. Only 13 (10.2%) stated they encountered a problem attempting to recreate in these areas. Lack of access and crowding were a recurrent theme in the complaints. (See Appendix, Item 3-B.)

Similarly, access difficulties were identified in question #9, which allowed respondents to comment on the availability of recreational activities or facilities near the creeks, rivers, lakes or ocean in the tri-county area. Several respondents identified the need to keep the public areas and waters clean, and

others complained about the maintenance problems found at some sites. Contrarily, there were respondents who offered encouraging comments regarding the availability of access points, the good maintenance of facilities, and the dedicated people who managed the recreational sites. In all, 43 respondents offered comments to this question. (See Appendix, Item 3-C.)

TABLE XVII.

RECREATION PARTICIPATION IN THE BCD REGION
FALL 1994 TELEPHONE SURVEY

Activity	Responses	Percentage
Sightseeing/nature observation	95	74.2
Walking or jogging on the beach	86	67.2
Beach swimming	84	65.6
Visiting a historic plantation/garden	84	65.6
Cruises in the Harbor or on a river	71	55.5
Picnicking along the shore	68	53.1
Fishing in a lake or river	67	52.3
Walking or jogging near a river/lake	65	50.8
Motorboating on a lake or river	56	43.8
Lake or river swimming	43	33.6
Shellfishing (shrimp, crabs, oysters)	38	29.7
Camping near a lake or river	32	25.0
Bicycling along the shore	30	23.4
Surf fishing	27	21.1
Waterskiing	21	16.4
Sailing	18	14.1
Camping near the ocean	15	11.7
Canoeing, rafting, kayaking	13	10.2
Jetskiing	9	7.0
Hunting	2	1.6
Diving	2	1.6
Surfing/windsurfing	2	1.6
Other	4	3.1

N = 128

The greatest threat to the water resources in the region is arguably the rapid growth in population -- coupled with inappropriate land conversion practices. Population growth exacerbates other problems, particularly pollution and access for competing uses. Moreover, as rapid growth occurs, the demand among competitive interests to use the region's water resources increases,

but the supply cannot keep pace. As always, a primary use is recreation, however recreational usage does not usually receive high consideration from planners and other governmental officials, unless it is couched in terms related to economic development. Thus, the supply for recreational use of the water resources languishes leading to crowding at existing sites and conflict among user groups.

An equally important consideration involving access is finding the means to fairly distribute recreational opportunities to all residents across various socioeconomic groups. There is a need to remove and prevent barriers to opportunities and participation, particularly impediments created by socioeconomic differences. For centuries, the water resources of the region have served all for many purposes; in particular, outdoor, water-related recreational opportunities must continue to be available for all socioeconomic groups.

Additionally, users of the resource must become partners in maintaining the resource and associated amenities to eliminate vandalism and other destructive activities. More programming involving resource protection and conservation is needed to educate recreational users and other parties about these issues.

Lastly, current planning efforts must balance the dynamics of economic and social growth with the static requirements of the natural environment. An understanding of the assimilative capacity of the water system is necessary to prevent potential devastating impacts. Otherwise, many uses may become less productive or less enjoyable as the resource is degraded beyond immediate repair.

Conclusions and Recommendations

From the review of previous studies, the inventory, and the preliminary survey, the majority of residents in the BCD region appear satisfied with the availability of water-related recreational opportunities in their area. However, the level of satisfaction may become tenuous, particularly with the region's steady growth in population eventually leading to overstressed water-related recreational resources and facilities. Discontent among user groups is sure to follow. It is important, therefore, to address the potential conflicts in advance.

However, the argument could be made that with the closure of the Charleston Naval Base and the possible closure of other military-related facilities, there will be a net loss of people from the area. Already, the closure has meant the loss of over 22,000 well-paying jobs. Such shrinkage in the employment base can expectedly lead to economic migrations from the area.

Current statistics on the Charleston economy show that the area is surviving very well without the military dollars. Existing industries like tourism have prospered in recent months; new industries have located in the region; and, various Federal economic stimulus packages -- for areas like Charleston suffering the loss of military installations -- have provided fodder for the region to winter what is hoped only a brief lapse into economic dearth.

Regardless of economic fluctuations, the BCD region must expect growth, and with that, the demands for various outdoor water-related recreational facilities and services. Foremost, current planning efforts must ensure the stability and vitality of the natural resource base. Otherwise, all uses will become less productive or less enjoyable as the resource is degraded beyond immediate repair. Therefore, recreation development must incorporate strategies of preservation and conservation to achieve success in managing the highly-valued water resources.

Coupled with measures to protect the resource base, steps must be taken to evenly distribute access and utilization to all residents across various socio-economic groups. Indeed, a tall order, but unavoidable if preservation and conservation efforts are given any hope for success. All user groups must become partners in maintaining the integrity and productiveness of the region's coastal waters ecosystem. It is truly a proposition the region and State cannot afford to dismiss. Specifically, this study points to the need to develop amenities and activities that facilitate public access and utilization, such as fishing piers, picnicking areas, open spaces, educational programming, and special events. Even more, the studies indicate a need to remove the barriers to participation, particularly impediments created by socio-economic differences.

Opportunities to initiate such an effort are readily available in less dense or under-utilized areas, such as the area of Dorchester County outside the Summerville corridor, the area of western Charleston County starting at the Edisto River and moving east, and the area of Berkeley County northeast of Highway I-26 to the Francis Marion National Forest. There appears to be a significant amount of untampered areas, with wetlands and creeks, that beg for limited usages.

To uncover these areas and determine the activities, facilities, and services required to develop them for public and private recreational opportunities, two immediate steps are needed: 1) an expanded survey of residents and visitors, and 2) reconnaissance of areas within the region having the potential for recreation development.

1.. South Carolina Budget and Control Board. South Carolina Statistical Abstract 1994.

² Since data for 12-17 year olds were not available for 1979, these comparisons were made of 18 years of age or older. The differences in preferences across years reported here are likely due in part to the different times of year in which these surveys were conducted. The 1979 and 1984 surveys were conducted in the summer, while interviewing for the 1990 survey occurred in late October and early November.

1. By Census definition, the urban population is composed of persons living in densely populated areas and in places of 2,500 or more outside urbanized areas. All persons living outside urbanized areas of less than 2,500 or in the open countryside are classified as rural. Source: South Carolina Statistical Abstract.

2. Poverty statistics are based on a definition originated by the Social Security Administration in 1964 and subsequently modified by Federal interagency committees in 1969 and 1980. Poverty thresholds are revised annually to allow for changes in the cost of living as reflected in the Consumer Price Index. The average poverty threshold for a family of four persons was \$7,412 in 1979 and \$12,674 in 1989.

3. South Carolina Budget and Control Board. South Carolina Statistical Abstract 1994.

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